

5375

U. S. COAST & GEODETIC SURVEY
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DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

State: LOUISIANA.

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. A 5375
Hydrographic }

LOCALITY

Lake Charles Deep Water Channel
Lake Charles, La.

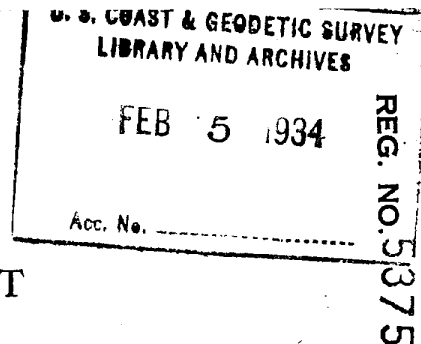
1933

CHIEF OF PARTY

J. C. Bose

U. S. GOVERNMENT PRINTING OFFICE: 1923

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY



HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. A

REGISTER NO. 5375

State LOUISIANA

General locality Lake Charles Deep Water Channel

Locality Lake Charles

Scale 1 : 10 000 Date of survey Sept. - Oct., 1933

Vessel Project HT-138

Chief of Party J. C. Bose

Surveyed by J. C. Bose

Protracted by A. F. Briggs

Soundings penciled by H. R. Burfford

Soundings in ~~fathoms~~ feet

Plane of reference 0.5 ft. below mean river level

Subdivision of wire dragged areas by _____

Inked by J. Levine

Verified by J. Levine

Instructions dated September 8, 1933

Remarks: Additional revision work done Jan. 24th and 30th, 1934.

Reviewed by R. L. Johnston

DESCRIPTIVE REPORT
TO accompany
Hydrographic Sheet
(Field) No. A

Instructions The survey was made in accordance with
Supplemental Instructions from the Director dated September
8, 1933.

Survey Methods The usual methods of launch hydrography
were employed. Soundings were taken with a lead line and
positions determined by sextant fixes. On one day only,
September 21, 1933, a few soundings were taken with a skiff
and with a sounding pole.

When Lake Charles was surveyed, an ordinary
8 lb. hand lead was used. It was found, however, that the
lake bottom had a layer of soft mud and for that reason the
lake was surveyed with a system of cross lines taken with a
lead which had a five-inch disk, 1/8 inch thick, bolted to
its bottom.

To survey the relatively narrow river a large
number of closely spaced signals was necessary because the
tall cypress trees in swamps prevented the use of even fairly
tall signals over considerable distances. On the aluminum-
mounted topographic sheets the signals had not been located
with the required close spacing and, furthermore, many had
been obliterated during the months elapsed before hydrography
was begun. As the topographic sheet had already been inked,
it was not considered advisable to take it into the field again.
Therefore, the additional topographic signals were located
directly on the freshly made boat sheet by a plane table tra-
verse run between recovered plane table signals. These po-
sitions were transferred to the smooth sheet and checked be-
fore the boat sheet became worn and wet in the course of
sounding.

Several signals were also located by means
of sextant angles.

Discrepancies No discrepancies in positions occurred.
Discrepancies in soundings were found in Lake Charles but
only as a result of different types of leads used. That is,
the soundings taken with the lead having a disk were about
a foot shoaler than those taken with the plain lead because
the former did not sink into the mud as much as the latter.
Near the shore the bottom is not quite as soft and therefore
the soundings at the inshore ends of the sounding lines are
fairly accurate.

It is recommended that in all cases of
discrepancies the soundings on the lines run after September
21, 1933 ("d"-day) be inked and considered correct and any
soundings disagreeing with them, which were taken prior to the
above date, be omitted.

The area inside of the two log pens (north of ⓄMid and north of ⓄHal) were not resurveyed because it was not considered worth while to risk damage to the launch's propeller on account of the many submerged stumps of piles. The areas inside of the dotted lines are not safe for boats, anyway.

Dangers. The only dangers in the area are some broken piles that are not visible above the surface of Lake Charles. These are dangers to small boats only, as they stand in shallow water. See vol. 5, page 7 and vol. 3, p. 34, position 65h.

Small boats desiring to go from the bridge (ⓄDraw) to the city of Lake Charles, should pass close to the spar buoy near the southern end of the lake and head for the airways beacon on the Majestic Hotel, or any point north of the latter, until abeam of the south-westernmost highway bridge (ⓄLee). A course from the center of the confluence of Calcasieu River and the southern end of the lake to the Lake Charles Boat Club passes dangerously close to the piling stumps referred to above.

Near the port area, in the short cut-off between ⓄCor and ⓄTon, a shoal spot was found in the center of the channel, which is supposed to have a depth of 30 feet at mean low Gulf level. The least depth found was 26½ feet (at 0.5 ft. below mean water level), on position 81 n, Vol. 5, page 40. By favoring the west bank of the canal, a vessel can carry a 30 ft. draft. The bottom under the 26½ ft. sounding was soft. It is known that earth slides from the east bank have occurred and this fact evidently accounts for the shoal spot.

Channels. The short canal described in the above paragraph is the only constructed channel. The remainder of the waterway depicted on the sheet is formed by the Calcasieu River.

Nearly all of the shipping goes only as far as the docks west of the highway bridge (ⓄDraw). Occasionally a vessel goes to the Kelly-Weber Co. dock (ⓄWeb) to discharge fertilizer. Up to this point, the controlling depth is 31½ ft. See soundings between position 57 h and 58 h. This depth, 31½ ft., is not the controlling depth for the whole waterway, however, as slightly less water exists in the limits of sheet B.

Midway between the Kelly-Weber dock and the railroad bridges, is the shallowest part of the Calcasieu River. The controlling depth here is 23 feet in the center of the channel. (See soundings between positions 58 g and 59 g). A private survey, a copy of which has been sent to the office, shows 31 feet in this locality. A special examination of this area was made but no depth of 31 feet could be found. A sounding line was run across the river slowly, near ⓄMay (positions 4p - 5p) and several unrecorded soundings taken.

No ocean going vessels were seen to go north of the Kelly-Weber dock. Up the river, in the city of Lake Charles, is a saw mill (Powell Lumber Co.) and a rice mill but traffic to those mills seems to be only on barges.

Lake Charles has a depth of 9 to 16 feet but is separated from the river by a ridge with a depth of 7 feet. As the bottom is soft, mud, it is possible for a boat to get through with a slightly deeper draft.

Miscellaneous. The two railroad swing bridges (Ⓞs Lad and Lit) are low over the river. The Southern Pacific bridge, which is the more southerly of the two, has the least headroom. The measurements of the headroom under this bridge are given in volume 5, page 30.

Two small marine railways, belonging to the Clooney Construction and Towing Co., are located just west of the highway bridge. They are capable of hauling out boats of 15 tons and 60 ft. length. The ways were located on the sheet by planetable.

Near the north end of the loop of the river (OKit), a large chemical plant is being constructed for the Matthieson Alkali Works. It is stated that the cost of constructing this plant will be about seven million dollars. When completed, it should materially increase the commercial importance of Lake Charles.

At the present time, the site has been cleared and a dredge is engaged in digging a channel, as sketched on the boat sheet.

J. C. Bose
J. C. Bose,
Chief of Party.

*Applied to drawing of Chart No. 592.
Jan. 9/35. E.R.*

STATISTICS (HYDROGRAPHIC SHEET A)

Number of Stat. miles of soundings	130
Number of Soundings	7,534
Number of Positions	1,560

The records and the smooth sheet have been examined and approved by the chief of party. The plotting of a number of random positions was checked and a comparison made with the boat sheet. The draftsmen were instructed to submit their solutions of any errors in recording to the chief of party for approval. The plotting was also inspected from time to time while it was in progress. A few errors were discovered and corrected.

J. C. Bose
J. C. Bose,
Chief of Party



LAC

February 8, 1934.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 5375

Locality Lake Charles, Louisiana

Chief of Party: J. C. Bose in 1933

Plane of reference is mean low water, reading

4.1 ft. on tide staff at Lake Charles Boat Club

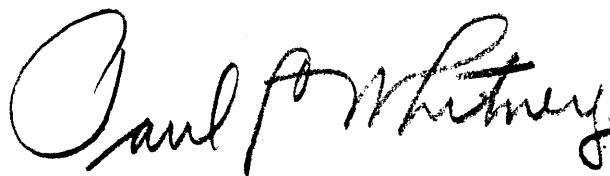
8.6 ft. below B. M. 1

2.5 ft. on tide staff at Ryan Street

19.8 ft. below B. M. E-1

There is practically no periodic tide in Lake Charles Waterway. Plane of reference was taken 0.5 foot below mean water level.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5375

The following statistics will be submitted with the
cartographer's report on the sheet:

Number of positions on sheet	1560..
Number of positions checked	...90..
Number of positions revised1..
Number of soundings recorded	7534.
Number of soundings revised	...49. (due to incorrect spacing) see verifier's report
Number of signals erroneously plotted or transferred	.None

Date: October 12, 1934.....

Cartographer: Julius Levine.....

Verification of pretracing	by J. Levine	Time 79 3/4
* Verification & linking of rocks and shoals		
Verification of linking ^{soundings} by J. Levine		Time 76 1/2
Review by		Time

* Verification & linking - "dangers to navigation" } see verifier's report
Additional plotting
depth curves
geographic names & titles }

SECTION OF FIELD RECORDS ✓

Report on - H-5375

Chief of Party - J.C. Bose

Protracted by - A.F. Briggs

Verified and Inked by - J. Levine

Surveyed in - {Sept.-Oct. 1933
Jan. 1934

Surveyed by - J.C. Bose

Soundings plotted by - H.R. Burfford.

The records conform to the requirements of the General Instructions.

On account of limited space on the smooth sheet only those depth curves which definitely outline areas of navigational importance were completed. Several depth curves close inshore were omitted due to insufficient number of soundings within the limits of such curves.

The field plotting in general was completed to the extent prescribed in the Hydrographic Manual with the following exceptions:

- (a) In many instances certain recognized dangers to navigation such as, "submerged piles", "stumps", "snags", etc. (which are common to this area on account of extensive cypress cutting operations) which were recorded in the sounding volumes were not plotted on the smooth sheet. This work was done by the verifier.
- (b) On pages 53-56, Vol. 5 of 5, of the sounding records there appear 2 lines of soundings taken along Lake Charles Docks. These soundings were taken at intervals of 10 meters along each dock, the leadsmen standing on the dock when soundings were taken.

Since these soundings could not properly be shown on the regular scale of the smooth sheet (1:10,000), it was recommended that an insert be plotted on a 1:5000 scale to cover this dock area and the soundings plotted thereon. (Authority: E.P. Ellis, 10-10-34)
This work was done by the verifier.

In addition to the above, the verifier had in several instances to revise the spacing of soundings between positions in accordance with the recorded time intervals, the majority of such cases being in critical areas where the respacing of such soundings to conform with the recorded time interval tended to clarify the hydrography and to improve the depth curves.

The junction with Hydrographic Sheet 5362 on the south is satisfactory. There is no junction with any sheet to the north since no hydrography was executed north of the limits of this sheet (H-5375) at this date.

The following records have not been received:
Recoverable Stations (Form 524)
Special chart for U.S. Lighthouse Service.

Respectfully submitted,

Julius Levine

Jr. Cartographic Engr.

October 12, 1934

Section of Field Records

Review of Hydrographic Survey No. 5375 (1933).

Lake Charles Deep Water Channel, Lake Charles, Louisiana.
Instructions dated Sept. 8, 1933 (J. C. Bose).
Surveyed September-October, 1933.

Chief of Party: J. C. Bose.
Surveyed by: J. C. Bose.
Protracted by: A. F. Briggs.
Soundings penciled by: H. R. Burfford.
Verified and inked by: J. Levine.

1. Condition of Records.

The records are clear and well kept and conform to the requirements of the Hydrographic Manual.

2. Compliance with Instructions for the Project.

The work complies with the instructions for the Project. The area has been systematically covered by sounding lines and the development is quite sufficient except in the case of the shoaling found in the short canal in Lat. $30^{\circ}13'.1$, Long. $93^{\circ}15'.55$. The descriptive report states that the controlling depth is supposed to be 30 feet but a least depth of $26\frac{1}{2}$ feet was found. It may be possible to carry a 30 ft. draft by favoring the west bank but the soundings on the sheet do not definitely prove this. A closer development at this spot would have been desirable.

3. Sounding Line Crossings.

The sounding line crossings as a whole are very satisfactory. There are differences of 1 foot in the soundings in the flat areas in Lake Charles which are attributed to the use of two different types of lead in a soft mud bottom. The shoaler soundings, obtained with a disk on the bottom of the lead, are probably the most accurate.

4. Depth Curves.

Within the limits of the survey the usual depth curves may be satisfactorily drawn.

5. Junctions with Contemporary Surveys.

The junction on the south with H-5362 (1933) is satisfactory. This is the only contemporary survey adjoining this work.

6. Comparison with Prior Surveys.

There are no previous surveys by this Bureau within the area covered by the present survey. BP.27067 (revised to April 1933) is a compilation from private surveys by civil engineers. The soundings are in fair agreement with our survey with the exception of a line

6. Comparison with Prior Surveys.

of soundings showing depths over 30 feet in the channel south of the railroad bridges. The present survey, H-5375 (1933), shows a controlling depth of 23 feet in this channel which should be accepted. The soundings in the flat areas in Lake Charles are slightly deeper on BP.27067 than on H-5375 (1933). The use of a slightly different plane of reference may account for these differences. Because of its uncertain character and accuracy and because of the detailed nature of our survey, the soundings shown on BP.27067 should not be used for charting.

7. Comparison with Chart No. 116.

This survey falls outside the limits of the larger scale charts Nos. 1278 and 1279. The small scale chart, No. 1116, shows no hydrography in this area.

8. Field Plotting.

The usual amount of field plotting was accomplished by the field party. In some cases the soundings were not correctly spaced and snags and piles located from the sounding lines were not plotted.

An insert, on a scale of 1:5,000 was prepared in the office in order to show the soundings along the docks in the port area (Lat. 30°13'.1, Long. 93°15'.55).

9. Additional Field Work Recommended.

No additional work is recommended unless it should be considered necessary to establish more conclusively the controlling depth in the canal (described in Par. 2, above).

10. Superseding Old Surveys.

There are no previous surveys in this area.

11. Reviewed by: R. L. Johnston - October, 1934.

Inspected by: A. L. Shalowitz.

Examined and approved:

K. T. Adams
K. T. Adams,
Chief, Section of Field Records.

B. Borden
Chief, Section of Field Work.

L. O. Pollock
Chief, Division of Charts.

G. W. Wade
Chief, Division of H. & T.